

Exhibit AS-1

Professional Summary

Anna Sommer is a principal of Energy Futures Group in Hinesburg, Vermont. She has more than 15 years' experience working on a wide variety of energy planning related issues. Her primary focus is on all aspects of integrated resource planning (IRP) including capacity expansion and production costing simulation, scenario and sensitivity construction, modeling of supply and demand side resources, and review and critique of forecast inputs such as fuel prices, wholesale market prices, load forecasts, etc. Additionally, she has experience with various aspects of DSM planning including construction of avoided costs and connecting IRPs to subsequent DSM plans. Anna has had formal training on the Aurora, EnCompass, PowerSimm, and Strategist models and has reviewed modeling performed using numerous models including Aurora, EnCompass, Capacity Expansion Model, PLEXOS, PowerSimm, PROSYM, PROMOD, RESOLVE, SERVM, Strategist, and System Optimizer. She has provided expert testimony in front of utility commissions in Indiana, Michigan, Minnesota, New Mexico, North Carolina, Puerto Rico, and South Dakota.

Experience

2019-present: Principal, Energy Futures Group, Hinesburg, VT

2010-2019: President, Sommer Energy, LLC, Canton, NY

2007-2008: Project Manager, Energy Solutions, Oakland, CA

2003-2007: Research Associate, Synapse Energy Economics, Cambridge, MA

Education

M.S. Energy and Resources, University of California Berkeley, 2010

Master's Project: *The Water and Energy Nexus: Estimating Consumptive Water Use from Carbon Capture at Pulverized Coal Plants with a Case Study of the Upper Colorado River Basin*

B.S., Economics and Environmental Studies, Tufts University, 2003

Additional training

Graduate coursework in Data Analytics – Clarkson University, 2015-2016.

Graduate coursework in Civil Engineering and Applied Mechanics – McGill University, 2010.

Research Experience in Carbon Sequestration (RECS), U.S. Department of Energy, 2009.

Selected Projects

- **EfficiencyOne.** Supporting EfficiencyOne's participation in Nova Scotia Power's integrated resource planning process. (2019 to present)

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- **Minnesota Center for Environmental Advocacy.** Evaluation of Xcel Energy's 2020 Integrated Resource Plan and Strategist modeling in support of that evaluation. (2019 to present) Evaluation of Minnesota Power Company's proposal to build a new natural gas combined cycle power plant and Strategist modeling of alternatives to the plant. Comments regarding Great River Energy's integrated resource plan to meet future energy and capacity needs. (2018) Comments regarding Otter Tail Power's integrated resource plan to meet future energy and capacity needs. Comments regarding Minnesota Power's integrated resource plan to meet future energy and capacity needs. (2016) Comments regarding Great River Energy's integrated resource plan to meet future energy and capacity needs. (2015) Comments regarding Otter Tail Power's integrated resource plan to meet future energy and capacity needs. (2014) Comments regarding Xcel Energy's Sherco 1 and 2 Life-Cycle Management Study. Comments regarding Minnesota Power's proposal to retrofit Boswell Unit 4. Comments regarding Minnesota Power's integrated resource plan to meet future energy and capacity needs. Comments regarding Xcel Energy's integrated resource plan to meet future energy and capacity needs. (2013) Evaluation of Otter Tail Power's plan to diversify its baseload resources. Comments regarding Minnesota Power's "Baseload Diversification Study" – a resource planning exercise examining the use of fuels other than coal to serve baseload needs. (2012) Comments regarding IPL's integrated resource plan to comply with pending EPA regulations and meet future capacity and energy needs. (2011) Evaluation of a proposal by seven utilities to build a new supercritical pulverized coal plant including alternatives to the plant and potential for greenhouse gas regulation. (2006)
- **Coalition for Clean Affordable Energy.** Evaluation of Public Service Company of New Mexico's abandonment and replacement of the San Juan generating station. (2019 to 2020)
- **Earthjustice.** Evaluation of the Puerto Rico Electric Power Authority's 2019 Integrated Resource Plan. (2019 to 2020)
- **Citizens Action Coalition of Indiana.** Evaluation of Southern Indiana Gas and Electric's proposal to offer DSM programs to its customers. (2020 to present) Comments regarding Indianapolis Power & Light's integrated resource plan to meet future energy and capacity needs. (2020) Advising stakeholders on stakeholder workshops in preparation for Southern Indiana Gas and Electric's integrated resource plans to meet future energy and capacity needs. Evaluation of Indianapolis Power & Light's proposal to offer DSM programs to its customers. Evaluation of Duke Energy Indiana's proposal to offer DSM programs to its customers. Evaluation of Indiana Michigan Power's proposal to offer DSM programs to its customers. (2019 to present) Comments regarding Duke Energy Indiana's integrated resource plan to meet future energy and capacity needs. Comments regarding Indiana Michigan Power's integrated resource plan to meet future energy and capacity needs. (2019) Comments on Northern Indiana Public Service Company's integrated resource plans to meet future energy and capacity needs. (2019) Evaluation of Southern Indiana Gas and Electric's proposal to build a new natural gas combined cycle power plant. (2018) Evaluation of Duke Energy Indiana's proposal to offer DSM programs to its customers. Evaluation of Southern Indiana Gas and Electric's proposal to offer DSM programs to its customers. Comments regarding Southern Indiana

Gas and Electric Company's integrated resource plans to meet future energy and capacity needs. Comments regarding Indianapolis Power & Light's integrated resource plan to meet future energy and capacity needs. Comments regarding Northern Indiana Public Service Company's integrated resource plan to meet future energy and capacity needs. (2017) Comments regarding Duke Energy Indiana and Indiana Michigan Power's integrated resource plans to meet future energy and capacity needs. (2016)

- [Environmental Law and Policy Center](#). Evaluation of DTE Energy's 2019 Integrated Resource Plan modeling and Strategist modeling in support of that evaluation. (2019)
- [New Energy Economy](#). Evaluation of Public Service Company of New Mexico's Strategist modeling of coal plant retirement scenarios. (2017)
- [Institute for Energy Economics and Financial Analysis](#). Evaluation of Puerto Rico Electric Power Authority's plan to build an offshore LNG port. (2017) Evaluation of Puerto Rico Electric Power Authority's proposal to meet future energy and capacity needs.

Selected Publications

The Husker Energy Plan: A New Energy Plan for Nebraska, prepared by Anna Sommer, Tyler Comings, and Elizabeth Stanton for the Nebraska Wildlife Federation. January 16, 2018.

Pennsylvania Long-Term Renewables Contracts Benefits and Costs, prepared by Elizabeth Stanton, Anna Sommer, Tyler Comings, and Rachel Wilson for the Mid-Atlantic Renewable Energy Coalition. October 27, 2017.

"Pursue Carbon Capture and Utilization of Storage," "Establish Energy Savings Targets for Utilities," and "Tax Carbon Dioxide Emissions," in Implementing EPA's Clean Power Plan: A Menu of Options, prepared by Anna Sommer for the National Association of Clean Air Agencies and the Regulatory Assistance Project. June 7, 2015.

Overpaying and Underperforming: The Edwardsport IGCC Project, prepared by Anna Sommer for Citizens' Action Coalition, Save the Valley, Valley Watch, and Sierra Club. February 3, 2015.

Public Utility Regulation Without the Public: The Alabama Public Service Commission and Alabama Power, prepared by David Schlissel and Anna Sommer for Arise Citizens' Policy Project. March 1, 2013.

A Texas Electric Capacity Market: The Wrong Tool for a Real Problem, prepared by Anna Sommer and David Schlissel for Public Citizen of Texas. February 12, 2013.

Independent Administration of Energy Efficiency Programs: A Model for North Carolina, prepared by David Nichols, Anna Sommer, and William Steinhurst for Clean Water for North Carolina, April 13, 2007.

Integrated Portfolio Management in a Restructured Supply Market, prepared by Paul Chernick, Jonathan Wallach, William Steinhurst, Tim Woolf, Anna Sommer, and Kenji Takahashi. June 30, 2006.

Ensuring Delaware's Energy Future: A Response to Executive Order No. 82, prepared by the Delaware Cabinet Committee on Energy with technical assistance at Synapse Energy Economics from William Steinhurst, Bruce Biewald, David White, Kenji Takahashi, Alice Napoleon, Amy Roschelle, Anna Sommer, and Ezra Hausman for the Delaware Public Service Commission staff. March 8, 2006.

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“Assessment of Carbon Sequestration Feasibility and Markets,” by Anna Sommer and William Steinhurst, in Mohave Alternatives and Complements Study, a Sargent & Lundy and Synapse Energy Economics, Inc., report prepared for Southern California Edison. February 2006.

Potential Cost Impacts of a Renewable Portfolio Standard in New Brunswick, prepared by Tim Woolf, David White, Cliff Chen, and Anna Sommer for the New Brunswick Department of Energy. October 2005.

Considering Climate Change in Electric Resource Planning: Zero is the Wrong Carbon Value, prepared by Lucy Johnston, Amy Roschelle, Ezra Hausman, Anna Sommer, and Bruce Biewald as a Synapse Energy Economics, Inc. report. September 20, 2005.

Potential Cost Impacts of a Vermont Renewable Portfolio Standard, prepared by Tim Woolf, David E. White, Cliff Chen, and Anna Sommer as a Synapse Energy Economics, Inc. report for the Vermont Public Service Board. October 16, 2003.

Presentations and Articles

“Practical Strategies for the Electricity Transition.” A presentation at Energy Finance 2019. June 18, 2019.

“Carbon Capture and Storage.” A presentation at Energy Finance 2018. March 13, 2018.

“Puerto Rico’s Electric System, Before and After Hurricane Maria.” A webinar with Cathy Kunkel on behalf of the Institute for Energy Economics and Financial Analysis. October 24, 2017.

“Rebutting Myths About Energy Efficiency.” A presentation at the Beyond Coal to Clean Energy Conference sponsored by Sierra Club and Energy Foundation. October 8, 2015.

“The Energy and Water Nexus: Carbon Capture and Water.” A presentation at the Water and Energy Sustainability Symposium. September 28, 2010.

“Carbon Sequestration.” A presentation to Vermont Energy Investment Corporation. August 17, 2009.

“Carbon Dioxide Emissions Costs and Electricity Resource Planning.” A presentation before the New Mexico Public Regulation Commission with David Schlissel. March 28, 2007.

“Electricity Supply Prices in Deregulated Markets – The Problem and Potential Responses.” A presentation at the NASUCA Mid-Year Meeting with Rick Hornby and Ezra Hausman. June 13, 2006.

“IGCC: A Public Interest Perspective.” A presentation at the Electric Utilities Environmental Conference 2006. January 24, 2006.

Woolf, Tim, Anna Sommer, John Nielsen, David Barry and Ronald Lehr. “Managing Electric Industry Risk with Clean and Efficient Resources,” The Electricity Journal, Volume 18, Issue 2, March 2005.

Woolf, Tim, and Anna Sommer. “Local Policy Measures to Improve Air Quality: A Case Study of Queens County, New York,” Local Environment, Volume 9, Number 1, February 2004.

Professional Affiliations

Board Member, **Public Utility Law Project of New York**, 2018 – present

Board Member, **Community Development Program of St. Lawrence County**, 2017 – present

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